

DETAILED ACTION

1. Applicant's arguments submitted on 06/29/11 in response to the Office action (OA) mailed on 03/29/11 have been fully considered. Support for amended claims is found in the specification (e.g. page 22 lines 13-14 and on page 23).
2. In view of applicant's amendment to the abstract submitted on 06/29/11, the objection to the specification as set forth in 03/29/11 OA is withdrawn.
3. In view of applicant's amendment to claims 1, 10, and 11, the art rejections as set forth in 03/29/11 OA are modified.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. **Claims 1, 3, 4, 7, 8, 10, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo et al. (EP 1 002 845A2) in view of Satoru Mori (JP 11-189762).**

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5. With respect to claims 1 and 11, Kondo discloses a pressure sensitive adhesive tape comprising a **substrate (equated to applicant's hard coat layer)**, an intermediate layer on the substrate, and a PSA layer on the intermediate layer (abstract).

6. As composition of the intermediate layer, Kondo discloses that material for intermediate layer is not particularly limited and it can be selected from various PSA and UV curable resins that are employed in the preparation of substrate (0032). It is noted that Kondo uses energy ray curable urethane acrylate oligomers in the preparation of PSAs and substrate (hard coat) (0023, 0039-0042). Accordingly, **the intermediate layer of Kondo is equated to applicant's cured urethane (meth) acrylate layer.**

7. Further, regarding claims 1 and 7, the urethane acrylate oligomer of Kondo has weight average molecular weight of 1,000 to 50,000 (0042 and 0079). Additionally, the urethane acrylate oligomer of Kondo is formed of same material as that of disclosed by applicant (see 0023 and 0041 of Kondo and 0016-0017 of pg pub of present application). As such, the urethane acrylate of Kondo equates to claimed difunctional urethane (meth) acrylate.

8. Moreover, regarding claims 1 and 8, given that the "one or more polymerizable compounds" are optional, the concentration of urethane acrylate of Kondo by itself

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would be 100% by mass and it meets content of the difunctional urethane (meth) acrylate of 80% or more by mass and 95 or more percent by mass as claimed.

9. As to claim 3, the thickness of the intermediate layer (cured urethane methacrylate layer) is e.g. 5 to 100 μm (0058).

10. As to claim 4, the substrate (hard coat layer) of Kondo comprises fillers and additives (0052-0053).

11. As to claim 10, it is noted that this claim is similar to claim 1 except that it recites that the cured urethane (meth) acrylate is formed by curing a curable composition "**consisting of**" a difunctional urethane (meth) acrylate. It is noted that Kondo discloses that "It is often difficult to obtain film only from above urethane acrylate oligomers..." (see 0043). This is interpreted as while it may be difficult to form the film from urethane acrylate it is not impossible to do so and as such Kondo meets "consisting of" requirement with respect to urethane acrylate in claim 10 given that there are no other required components.

12. **The difference between the claimed invention and the prior art of Kondo is that Kondo is silent as to teaching the composition of the hard coat as claimed (claims 1 and 10) and the thickness of the hard coat layer as claimed (see claim 3).**

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13. However, Satoru discloses resin composition that is used in formation of a substrate and adhesive sheet using said substrate (page 3 0001). Further, the substrate of Satoru is formed of urethane acrylate oligomer and a reactive diluent (page 4 0005). As a reactive diluent, Satoru discloses polyfunctional acrylates with two, three or more acrylate groups per molecule (page 8 0016). Additionally, polyfunctional acrylates as disclosed by Satoru at page 4 paragraph 0019 meet claimed hard coating compounds such as trimethylol propane trimethacrylate, pentaerythritol tetramethacrylate etc. Further, the thickness of the adhesive sheet substrate of Satoru is usually between 1 to 1,000 μm and preferably 10-500 μm (see page 13 0027).

14. It is noted that Kondo at 0044 discloses that "According to necessity, use may be made of polyfunctional (meth) acrylates" in order to form a substrate film (hard coat) of urethane acrylate. Satoru discloses a substrate film of urethane acrylate with polyfunctional acrylates.

15. Based on the above, it would have been obvious to one having ordinary skill in the art at the time the invention was made to form the urethane acrylate substrate film (hard coat) of Kondo with the polyfunctional methacrylates and thickness as taught by Satoru, motivated by the desire to easily form the substrate film and provide necessary strength.

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16. **As to the claim limitation “wherein the pencil hardness of the surface of the hard coat layer measured according to JIS K5600 is not less than H”**, it is submitted that said limitation is necessarily present in the hard coating (substrate layer) of Kondo as modified by Satoru for the following reasons: it is submitted that claimed hard coat layer comprises UV curable hard coat which is a polyfunctional acrylic compound having three or more functional groups (see claim 1) which are specifically disclosed by claim 11. It is noted that a substrate layer of Kondo as modified by Satoru includes energy curable thermosetting resins (see 0038-0039 of Kondo) and said **modified substrate** of Kondo also includes polyfunctional acrylates such as acrylates having two, three or more acrylate groups (see 0016 on page 8 and 0019 on page 9 of Satoru). Accordingly, the modified substrate of Kondo is identical to that of presently claimed hard coat layer. Therefore, the modified substrate of Kondo would intrinsically have pencil hardness as claimed. See MPEP 2112 (V).

17. **Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo et al. (EP 1 002 845A2) in view of Satoru Mori (JP 11-189762) as applied to claim 1 above, and further in view of further in view of Furuya et al. (US 6,150,026).**

18. Kondo is silent as to teaching the protecting film laminated on the surface of the hard coat layer.

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19. However, the reference of Furuya is relied to show that it is known to apply protective layer on the surface of a hard coat layer. Specifically, Furuya discloses a polypropylene based resin exterior panel that includes a hard coat layer (column 1 lines 5-20 and column 2 lines 45-50). Further, at column 7 lines 27-35, Furuya teaches of forming of a protective film layer on the surface of the hard coat layer to protect the surface of the exterior panels from dirt, dust etc. (column 7 lines 25-30).

20. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to apply a protective film layer on the hard coat layer of the PSA sheet, motivated by the desire to protect the hard coating layer from scratches and other damage.

Response to Arguments

21. Applicant's arguments filed on 06/29/11 have been fully considered but they are not persuasive.

22. Applicant argues that primary reference of Kondo et al. ("Kondo") (EP 1 002 845 A2) does not disclose that the substrate (equated to a hard coat layer by the Examiner) of his invention is made from a polyfunctional UV curable acrylic compound having three or more functional groups. Applicant assert that the photopolymerizable urethane acrylate oligomer of Kondo as disclosed in paragraph 0041 does not have three or more functional groups and all of the examples are difunctional urethane acrylate oligomers (see pages 8-10 of 06/29/11 amendment).

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23. The Examiner respectfully disagrees for the following reasons: in response to applicant's arguments that Kondo does not teach or suggest that the substrate of his invention is made of polyfunctional UV curable acrylic compound having three or more functional groups, it is submitted that one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. The Examiner acknowledges applicant's position that Kondo does not teach that the substrate of his invention is made of polyfunctional UV curable acrylic compound having three or more functional groups, however it is submitted that Satoru Mori (JP 11-189762) is relied upon to render obvious claim limitation of hard coat layer comprising polyfunctional UV curable acrylic compound having three or more functional groups (see paragraphs 15, 16, and 18 on pages 5-6 of 03/29/11 OA).

24. Applicant argues that neither Kondo nor Satoru disclose that the substrate layer (equated to a hard coat layer by the Examiner) has a pencil hardness of not less than H according to JIS K5600 (see page 11 of 06/29/11 amendment).

25. The Examiner respectfully disagrees for the following reasons: it is submitted that claimed hard coat layer comprises UV curable hard coat which is a polyfunctional acrylic compound having three or more functional groups (see claim 1) which are specifically disclosed by claim 11. It is noted that a substrate layer of Kondo as modified by Satoru includes energy curable thermosetting resins (see 0038-0039 of Kondo) and the modified substrate of Kondo includes polyfunctional acrylates such as

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acrylates having two, three or more acrylate groups (see 0016 on page 8 and 0019 on page 9 of Satoru). Accordingly, the modified substrate of Kondo is identical to that of presently claimed hard coat layer. Therefore, the modified substrate of Kondo would intrinsically have pencil hardness as claimed. See MPEP 2112 (V).

26. As to applicant's arguments on pages 11-12 of 06/29/11 amendment that the substrate of Kondo has elasticity but does not have a hard surface, it is respectfully submitted that while applicant may have a different interpretation of the term "hard coat layer", however, given that the substrate layer of Kondo as modified by Satoru as set forth above is formed of same material as claimed by applicant's hard coat layer, it is clear that the substrate layer of Kondo equates to claimed hard coat layer.

27. Applicant disagrees with the Examiner's characterization of the intermediate layer of Kondo with the cured urethane (meth) acrylate layer. Applicant argues that in the present invention the cured urethane (meth) acrylate layer is formed as a substrate of the PSA sheet and as such the cured urethane (meth) acrylate layer functions as a substrate of the PSA sheet. According to applicant, if the Examiner's assertion is correct then the intermediate layer of Kondo functions as a substrate and as such one in possession of Satoru reference would modify the intermediate layer of Kondo with teachings of Satoru which is related to PSA sheet substrate (see pages 13-14 of 06/29/11 amendment).

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28. The Examiner respectfully disagrees because applicant's arguments that the cured urethane (meth) acrylate layer functions as a substrate for PSA layer are not commensurate in scope with the presently claimed invention. The presently claimed invention requires that a PSA layer, a cured urethane (meth) acrylate layer, and a hard coat layer be laminated in this order (PSA/cured urethane(meth)acrylate/hard coat). Additionally, as set forth previously, Kondo's substrate layer (hard coat) includes polyfunctional (meth) acrylates(0044) which are disclosed by Satoru (0019 on page 9) which meets claimed hard coat layer comprising polyfunctional UV curable acrylic compound having three or more functional group. Moreover, the Examiner submits that even if one were to modify the intermediate layer of Kondo in view of Satoru, this does not mean that the other layers (e.g. a substrate layer) of Kondo can not be modified in view of Satoru. Accordingly, applicant's arguments are not found persuasive and the art rejections are maintained.

Conclusion

29. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

30. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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31. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANISH DESAI whose telephone number is (571)272-6467. The examiner can normally be reached on Monday-Friday, 9:00AM-5:30PM.

32. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alicia Chevalier can be reached on 571-272-1490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

33. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Alicia Chevalier/

Supervisory Patent Examiner, Art Unit 1788

/A. D./

Anish Desai

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09/06/11